

TRANSACTIONS
OF THE
LINNEAN SOCIETY.

I. *Observations on the Perigynous Insertion of the Stamina of Plants.* By Richard Anthony Salisbury, Esq. F.R.S. V.P.L.S.

Read March 15, 1803.

THE following Observations have been hastily committed to paper, to excite the attention of those Botanists, whom I might have the honour of addressing this evening, to a very important branch of their favourite science; namely, that insertion of the Stamina which the celebrated *Jussieu* has denominated *Perigynous*: for I lament that as yet I have not met with one of our own countrymen, who had ever thought about the subject at all. I presume that this *perigynous* insertion is entirely factitious, or in other words, which you will all comprehend whether you have read *Jussieu's* book or not, that there is no instance whatever in the whole Vegetable Kingdom, of Stamina being inserted in the Calyx. Nor is this mere logomachia, or a cavil respecting terms: for, if my ideas be true, the difficulty of distinguishing Calyx from Corolla will rarely occur, and the designation of each of those parts correspond more exactly with its real office and importance in the Vegetable Economy.

Who would not be astonished to find among Quadrupeds, any Genus with Testiculi originating in the Præputium! Yet among Vegetables, Stamina proceeding from the Calyx appear to me equally unnatural. The first ideas which we gain on any subject, whether correct or incorrect, attach with such force, that it is no easy business to dismiss them afterwards: moreover, very few will be at the trouble of examining for themselves, or so unpopular as not to adopt the fashions of the day. For, unfortunately, there are fashions in science, as well as in dress: but the Laws of Nature, founded by Infinite Wisdom, I believe like Truth itself to be immutable, and the Motto which we have lately adopted who belong to this Society, will not allow us to deceive ourselves or others respecting them. By exposing this pretended *perigynous insertion* indeed, many of the *Classes*, and some of the *Orders* in the French arrangement must be given up; but the Genera themselves will come in more conformably to their Natural Affinities, and often as *Jussieu* himself hints in his Notes. I was anxious to have gone to *Paris* in the autumn, to have stated this, and many other botanical dubia, with the greatest deference to that great man: "*Lubuit enim integros adire fontes atque haurire:*" but Time flies rapidly unless seized by the forelock, and I know not when I can spare a month again. Till so wished-for an occasion, therefore, presents itself, I must be content with such assistance as I can gain at home. That comet-like genius *Correa de Serres*, who is now in the perihelion of *Paris*, long ago told me that *Corolla regularis* and *irregularis* would be found in every Natural Family, and I have reason to think the same may be said of *Germen inferum* and *superum*. Having examined a great many flowers to verify that supposition, I could not avoid attending also to the insertion of their several parts: this I have constantly found to be in one common point, more or less conspicuous

spicuous indeed, yet generally so distinct as to merit, both from its appearance and the dignity of its office, a particular name: for, in this common point I suspect all the necessary changes in the vessels to produce the various parts of the flower and fruit first begin. I have long called it *Torus*, to distinguish it from the *Receptaculum* of *Aggregate* and *Syngenesious* flowers: the real structure of the latter I have yet to learn, but *Aggregate* flowers appear to me nothing more than a close mode of *Inflorescentia*. *Adanson* has the merit of having first described this common point of insertion by the name of *Diske*. The period at which he published his book, was particularly unfavourable to the study of Natural Families, few having been then learned enough in Botany to understand it, and those few who might have understood it, disgusted by the uncouth spelling, barbarous names, and sharp attacks on the *Sexual System* then shining forth in all its glory. I am also ashamed to own, that for many years I never looked into the *Familles des Plantes*, regarding them with the same contempt as our *President* has thrown upon them in his preliminary Discourse printed in the first volume of our Transactions. The solid information they contain, however, has since taught me to think very differently; and the honest and patient labourer in the mine of Natural History, may always have this satisfaction, that the value of what he discovers, will, at one period or another, be fully appreciated and understood. In hopes of meeting with something respecting this common Point of Insertion, I have just read *Mirbel's Traité d'Anatomie et de Physiologie Végétale*; but he says little more than that it is a part of the Calyx, and is totally silent as to its connecting the different parts of the flower: this is the more wonderful, as he must have dissected many of the flowers which I shall presently have occasion to mention.

In distinguishing the Calyx and Corolla, he is far more explicit,

and very clearly proves the inconsistency of the notion, that in the whole tribe of *Monocotyledones*, what we vulgarly call the Flower is a true Calyx: indeed I nearly agree with *Mirbel* respecting these two parts, though my conclusions are drawn from very different premises.

As the insertion of the Stamina appears to me of so much consequence in putting an end to all our doubts, previously to mentioning the most striking instances I have met with, I must trespass upon your time and attention, while I briefly state the opinions that have hitherto prevailed respecting Calyx and Corolla. With the immortal *Linné's* doctrine, that the Calyx is a continuation of the outer, and the Corolla of the inner bark, we are here all perfectly acquainted; and that in some plants which have only one of the above-mentioned integuments, he thought it of so little moment, by which of those titles the part was described, that he says "*Corolla (vel si mavis) Calyx.*" In his golden legacy, the *Philosophia Botanica*, he observes, "*Limites inter calycem et corollam absolutos, naturam non posuisse, patet ex Daphnide, ubi connata ambo et margine unita veluti folium Buxi.*" This however is not the case in all the species of that genus: stronger instances of one running gradually into the other, may be seen in *Delphinium*, *Ranunculus*, *Nymphaea*, *Castalia*, and *Magnolia*; notwithstanding which I have not the smallest doubt of their being perfectly distinct organs, and performing totally different functions. For, similar arguments might be produced to confound all the other parts of the flower: in some species of *Erica*, the upper leaves change insensibly into Bracteæ: in the common *Holly*, the Pedunculus itself becomes soft and of a fine scarlet colour like the fruit: in *Cratægus* the Calyx is frequently persistent and pulpy like the Pericarpium: in *Illicium Floridanum*, the Petals insensibly grow narrower and so like the filaments, that they

they can only be distinguished by having no Antheræ: nay in *Canna*, we have even an instance of the male parts of the flower passing into the female, where the innermost lacinia of the Corolla to which the Anthera is attached, always coalesces more or less, so as to form one and the same lamina with the dilated petaloid Style. *Jussieu* adopts the Linnæan definitions of Calyx and Corolla somewhat amplified; but in his practice, if I may use a vulgar expression, he does not stick to his text. He says, "*Calyx integumentum floris exterius, est corticosa pedunculi floralis productio. Corolla, interius tegumen, pedunculi libro non epidermidi continuum, non persistens, sed cum staminibus plerumque deciduum fructum involvit aut coronat, nunquam cum ipso concrescens, et suas partes cum staminibus numero æqualibus sæpius alternans.*" He then quotes *Narcissus* as an example of an integument, which growing to the fruit with stamina opposed to its divisions, must consequently be a true Calyx. Here I think that consummate Botanist mistaken: for, the Spatha appears to me the first expansion of what has been hitherto erroneously called *Epidermis*, and to supply the place of a more perfect Calyx in that Natural Family: nor can I see that the integument is joined to the Pericarpium in a different way from that of many other truly epigynous flowers among the *Dicotyledones*: lastly, what weighs with me more than every other consideration is the affinity of the part in question to the Stamina, a character the importance of which *Jussieu* owns in strong terms; "*Corollæ magna cum staminibus cognatio*" is his expression. I was glad to find these sentiments corroborated by *Mirbel*, who runs into the other extreme however; for he says, that as the Calyx is a continuation of the bark, and that many of the *Monocotyledones* have no bark at all, in those genera which have only a single integument it must necessarily be Corolla. He also proposes that the integument of all flowers, whether

whether it be one or two, should in future be described by the common name of *Perianthium*, including both *Calyx* and *Corolla* under that appellation. *Ventenat* in the *Magasin Encycl.* 1re année, tome xi. gives as an essential characteristic of the *Corolla* its *Tracheæ* or *spiral vessels*: but to say nothing of the practical difficulties attending such a distinction, they have since been found not only in some true and legitimate *Calyces*, but even in the *Bracteæ* of *Strelitzia* by Mr. *Bauer*; from whose observation as well as my own I am quite convinced that they are not the common tubular vessels of the plant in a state of decay, as *Mirbel* supposes. *Adansen* noticed these *Tracheæ* in his *Familles des Plantes* long before *Ventenat*, quoting the original observer, *Saussure*. I believe I have now mentioned all the opinions hitherto promulgated on this subject, none of which have ever appeared quite satisfactory to me: for, the overpowering similarity between many *Monocotyledonous* and *Dicotyledonous* flowers forcibly withholds me from distinguishing them into two sorts with *Jussieu*, whilst the widely different organization of their Stems totally overturns the *Linnæan* hypothesis of the *Corolla* being invariably a continuation of the *Liber* or *inner bark*. In this difficulty I have no guide but analogy to lead my dim and imperfect researches after the truth: yet it is from pure analogy, that we dare to entertain some of the most sublime opinions; for, what astronomer doubts of the numerous stars before him being inhabited? I therefore consider all the different parts of the flower as proceeding from one common point, just as the *Genitalia* of animals have one common origin under the *Venter*. Of these parts, the *Calyx*, or outer cover, answers pretty nearly to the *Præputium* and *Labia Pudendi*, being like them continuous with the exterior muscles of the whole individual: the *Corolla*, or inner cover, seems to have no less analogy with the two next important parts

parts in animals, the *Glans Penis* and *Clitoris*, being like them flaccid and evanescent when the business of impregnation is over: for from above 500 experiments, made by carefully taking away the Corolla while the flower was very young, I have found its presence to be of more importance than has been usually supposed. The remaining similarities are so obvious, and so emphatically described by our great master in his *Sponsalia Plantarum*, that I need not recall them to your memory. I would therefore define the Calyx, *Involucrum floris exterius, herbæ plerumque colore et substantiâ consimile, toro insertum, staminibus semper discretum*: and the Corolla, *Involucrum floris interius, herbæ plerumque colore et substantiâ dispar, toro insertum, staminibus vel conjunctum vel in eodem puncto ortum*. In the last definition I have entirely omitted the situation of the Stamina as being alternate with the divisions of the Corolla, this distinction proving too inconstant for a primary character; a far more certain one is obtained by referring to their conjunction with it and joint termination. The Calyx being thus reduced within its natural limits, and the Receptacle brought forward to its long-neglected rights and honours among the other parts of the flower, the difficult and ambiguous Insertions, which *Jussieu* has stated with so much candour and integrity, vanish; and all the Natural Orders which agree in that respect may be arranged in one continued series. Moreover, when only one Involucrum is present, and the common analogies of colour, figure and consistence fail, far less, if any, difficulty will occur in determining it: thus in *Proteæ*, which have the Stamina inserted near the top of the Involucrum, it is indubitably a true Corolla; while in *Atriplices* which have the stamina inserted in the receptacle, it is as surely a true Calyx, exactly corresponding with that of *Amaranthi*; in fact, *Atriplices* and *Amaranthi* are only divisions of one and the same Natural Order. It now only remains

remains for me this evening to go through the *Perigynous* Genera of *Jussieu*, pointing out what I conceive to be their real insertion: but as English Botanists may be too justly reproached with neglecting the study of his Orders, on some future occasion I hope to lay before you the result of my meditations on the *Monocotyledones*, to which I devoted the evenings of last winter: the *Dicotyledones* being far more numerous, and containing between two and three hundred genera, that I have never yet even looked at, will take me a much longer time.

The *Palms* are the first *Perigynous* Order: of these I have examined three genera living, and from the different dried specimens in *Sir Joseph Banks's* Herbarium, and the excellent drawings in the *Coromandel Plants*, I have no doubt that the Stamina of the whole Order are inserted in a distinct hypogynous receptacle. *Jussieu* indeed hesitates and says after "*imis laciniis calycinis, (an potius glanduloso corpori hypogyno?)*" From their affinity with Grasses, especially *Juncus*, one would at first conclude their Involucrum to be a Calyx; but their Spathæ and Bracteæ are the parts analogous to the Glumæ of *Grasses*, and some genera have evidently a true monopetalous Corolla. The *Palms* come nearer to the *Aroideæ* than *Asparagi* in a Natural Series, and may now be placed next to them: no one who compares the figures of *Borassus* and *Cocos* in the *Coromandel Plants*, with *Aponogeton* and *Pothos*, will doubt about this; and the germination of the last genus, which I have repeatedly raised from seeds, still further confirms it. *Asparagi*, the second *Perigynous* Order, have their stamina likewise inserted either in the Corolla, or a distinct hypogynous receptacle: the fragrant *Lily of the Valley* and *Alstroemeria*, which certainly belongs to this Order, are examples I would offer for your examination. *Junci*, the third *Perigynous* Order, will in all probability be greatly altered in the next edition of *Jussieu's* Genera.

Genera. *Eriocaulon*, the first genus, I yet know little about; but when Mr. *Brown* returns, he will inform us. I guess it is allied to *Scirpus* and *Schænus*, or perhaps comes still nearer to *Typha*. *Restio* and *Juncus* have no affinity at all with the other genera of this section: their Stamina are completely hypogynous, and they must be placed after their near relations the Grasses. *Xyris* is a very curious genus, and possibly a true *Iridæa*, though not for the Reason which *Jussieu* gives, its being triandrous: but the Filaments are inserted in the same part of the Corolla, which twists up when it decays as in some of the *Iridæa*, so that it merely differs in having Germen superum. Before I could reconcile myself to Germen superum and inferum being found in the same Family, I had placed it near *Tradescantia*. *Aphyllanthes* has given me more trouble than any genus in all the *Monocotyledones*: the Stamina are inserted in the Corolla, and I believe it will come in at the end of *Bromelæa*. *Rapatea* (*Mnasion* of *Schreber*) must certainly join the same order after *Tillandsia*. *Mayaca* (*Syena* of *Schreber*) belongs to a distinct order which I would call, after the largest and most known genus in it, *Tradescantæ*; making the termination always in *æ* long, rather than the hated and pompous *oidæ*: thus all confusion, either in writing or speaking of the genus which gives a name to the Order, in the plural number, is avoided: this Order of *Tradescantæ* will contain *Pontederia*, *Hapalanthus*, *Commelina*, *Callisia*, *Tradescantia*, and *Conda* of the *Hindoos*, all which genera have stamina hypogyna. *Polia* must migrate to the *Asparagi*, as *Jussieu* supposes. The third section of *Junci* constitutes another very natural assemblage, which we all know well, the *Tripetaloideæ* of *Linne*: in these the Stamina are so very evidently placed on a large hypogynous receptacle, that I am totally at a loss to account for *Jussieu's* making them perigynous. Of the genera in the fourth section of *Junci*, *Cabomba*

(*Nectris* of Schreber) belongs also to the *Tripetaloideæ*: *Scheuchzeria* and *Triglochin*, in natural affinity, must I believe join *Zannichellia*, *Potamogeton*, *Ruppia*, and *Zostera*, after the *Arums*; and the remainder are a separate order of themselves, the *Veratrææ*. In this order of *Veratrææ*, the Stamina are inserted in the Corolla: it will include besides *Colchicum*, which has not the least immediate affinity to *Crocus*, *Bulbocodium*, *Tulipa*, *Melanthium*, *Bathuna*, and *Wurmbea*. *Lilia*, the fourth perigynous order, as they now stand, contains *Tulipa* just mentioned, then *Erythronium*, *Gloriosa*, and *Uvularia*, which all belong to *Asparagææ*; and lastly *Fritillaria*, *Imperialis*, *Lilium*, and *Yucca*. As many of these genera will soon be in flower, my opinion that their Stamina are inserted in a true legitimate corolla, exactly analogous to the most perfect among the *Dicotyledones*, can be easily examined. In all the remaining Perigynous Orders, *Bromelææ*, *Asphodeli*, *Narcissi*, and *Irides*, the Insertion of the stamina is likewise so very plain, that it is only necessary to refer you to the plants themselves: indeed they have only been placed in this Class by *Jussieu*, because he considers the Involucrum of all *Monocotyledones*, as a Calyx and not a Corolla. The affinities of some few of the genera, however, may perhaps be deemed worthy of arresting your attention for a few moments longer. *Phormium*, the *New Zealand Flax plant*, I have little doubt, belongs to *Bromelææ*: as it is now in most of our collections, and has produced flowers in this country, I trust ere long to see them brought to this table: from *Miller's* figure they appear similar to those of *Pitcairnia*; but its tough rigid leaves, and peculiar mealy pubescence, first gave me the idea of its real place in the great chain of nature. *Gethyllis* has not the Habit of *Crocus* when more carefully inspected, but rather that of *Curculigo* and *Hypoxis*, with which it must be placed. *Tulbaghia* used to be
common

common in our collections, and I wish that any Botanist who meets with it would attend to it: I place it now after *Allium*, but for no good reason; the stamina are inserted in the Corolla, which has a double Limbus. *Tacca* puzzles me extremely: is it really monocotyledonous? if so, it comes nearer to *Dioscorea* than any genus I know. *Polyanthes*, I think, belongs to the same order with *Hemerocallis cordifolia* and *cærulea* of our gardens, which are no *Hemerocallides*, but a distinct genus: shall we name them *Saussurea*? for their spiral vessels are very beautiful. *Xiphidium* appears to me very near, if not the very same genus with *Wachendorfia*: I remember seeing it at *Sion House*: it is particularly tender, and in this country flowers imperfectly about Christmas: this plant, with *Dilatris*, *Hæmodorum* of our *President*, *Argolasia*, *Anigozanthus* of *Billardiere*, *Philydrum*, and *Wachendorfia*, form an easy and distinct order, which should be placed before the *Veratrææ*.

The fifth and sixth classes of *Jussieu* introduce the *Dicotyledones*: the latter of these is entirely composed of what he thinks *Apetalous* Plants, and consequently, whenever the Stamina are inserted in the Involucrum, he calls them *Perigynous*. I have already observed, however, that if there be a great similarity in the substance of the Involucrum and the Filaments, it should rather be considered a Corolla: and we shall find that this is not only the case in all the genera of this class, but that some of them have both a Calyx and Corolla, of which *Quinchamalium* the second genus of the first order is a remarkable instance. *Hippophae* among the *Eleagni*, seems to me to be a real *Diclinis*, and I should guess it ought rather to go near to the *Atriplices*: I have not yet examined the fruit, but according to *Gærtner* it has germen superum. *Daphne Laureola* is now in flower; and though the Involucrum in this species is green, the Filaments run down it,

and it falls off soon, without any of the usual characters of a Calyx: the *Torus* in this species is very conspicuous, for which reason I mention it. The third Order contains the *Proteæ*, which, as has been said before, have undoubtedly a true corolla: there are about eight Genera in this Order not yet distinguished by *Jussieu*. *Laurus* in the fourth Order appears to me also to have a legitimate corolla: the stamina at any rate are inserted in the *Torus*, so that it must be placed among the Hypogynous genera. The fifth Perigynous Order of *Polygonæ* is so common in all gardens, fields, and road sides, that it will be a very easy business for any one to satisfy himself that their stamina are not inserted in the Involucrum; and therefore whether it be a calyx or corolla is no matter, they must be hypogynous. The same holds good with the sixth Order of *Atriplices*, only that the *Torus* is often so much larger, that there cannot remain the least shadow of doubt respecting the Insertion: in *Rivina Dodecandra* particularly, the Stamina are ranged upon the receptacle in three different rows, one above the other. The ninth Class contains genera with *Perigynous Corollas*, not *Stamina*; that is, the Corolla inserted in the Calyx: the same powerful objection remains to be brought against this distinction, namely that it is not founded in Truth, the Corolla being really inserted in the receptacle; nay in most of the Genera, it is quite separate at the base both from the Calyx and Stamina, as in *Kalmia*, *Rhododendron*, *Azalea*, *Ledum*, *Itea*, *Erica*, *Calluna*, *Salaxis*, *Andromeda*, *Vaccinium*, *Menziesia*, *Clethra*, *Pyrola*: this order I have particularly studied, and here again we have an instance of *Germen superum* and *inferum* in the same Family. The fourth order of *Campanulæ* closes this class, and in every species I have yet examined there is a flat receptacle covering the disk of the germen, in which both Calyx and Corolla originate. We come now to the
fourteenth

fourteenth class of *Jussieu*, containing no less than thirteen large Orders; and among them the *Calycanthemis* of *Linne*, which have ever been considered by all Botanists as *perigynous*. It is with no little diffidence, therefore, that I venture publicly to contradict this generally received opinion, the absurdities and inconsistencies of which however are so glaring, that I think, when they are demonstrated, it will be given up. Nor is it very wonderful that so false a conception, which I imagine first originated from *Tournefort's* quaint expression of "*Calyx in fructum abiens*," should have been held universally: for till *Jussieu's* book actually forced Botanists to open their eyes a little wider than they had been accustomed, nobody ever thought of scrutinizing the connection of the different parts of the flower any further than was necessary to find its place in the *Linnean* System. Most commonly the part taken by authors for Calyx is in fact a very magnificent receptacle, upon which the real Calyx as well as all the other parts of the flower are inserted: and this whether the Pericarpium be inferum as in *Pyrus*, apparently inferum as in *Rosa*, or superum as in *Prunus*. The best and shortest way of explaining my sentiments will be to describe the Insertion in one genus of each Order. *Sempervivum* stands first, and whoever will give himself the trouble of looking at it, will find the Calyx, Corolla, and Stamina all inserted on a shallow cotyliform body, which is likewise covered with Honey: that this receptacle is completely distinct from the Calyx, appears from its remaining in full vigour after the Calyx, Corolla, and Filaments are withered. *Saxifraga* in the next Order is a very useful genus to study on this head, for in some species the Germen is inferum, in others only semi-inferum, in others again quite superum; yet in every species, the Calyx, Corolla, and Stamina proceed from a thick callous margin, which is persistent. *Cactus* in the third Order has

has a flower which we all know very well; but so far from allowing this to be *Perigynous*, I cannot find that it has any Calyx at all: its Stamina are exceedingly numerous, and gradually coalesce with the Petals into a thick Neck (I would hardly call it Tube) just as in *Camellia*. *Ribes* placed in this Order at present surely belongs to *Saxifragæ*: compare the flowers of the common *Currant* with *Chrysosplenium* or *Adoxa*: but the serratures and callosities of the Herba in the *Gooseberry* first indicated to me its affinity. *Portulaca* in the fourth Order has only a 2-phyllous Calyx, in which there is not the smallest room for the five Petals to be crammed: the whole Pedunculus in this genus might with equal propriety be termed Calyx as its Torus. *Mesembryanthemum* in the fifth Order as to insertion exactly resembles Cactus, but this genus has a regular quinquefid Calyx. *Oenothera* and *Epilobium* are very common examples of the 6th Order: their receptaculum is so very long and remarkable, that it never fails to strike a beginner in Botany: at least many of my young friends have not only hesitated but thought it impossible that a Master in the science could call this part Calyx: nor are the objections of a sensible Scholar always to be despised, for he comes unprejudiced on the subject, and sees the Works of Nature as they really are. The beautiful *Myrti* constitute the seventh assemblage of Perigynous Corollas: in no order is their real insertion more necessary to be understood than this; for the essential characters of the Genera often depend upon it solely. *Lepidospermum* and *Philadelphus* are two instances which I shall not easily forget: when the former genus was first discovered in *New Zealand* by Sir *Joseph Banks* and Dr. *Solander*, they had no doubt from its habitus, that it was a new genus; but upon comparing it with the Linnæan characters of *Philadelphus*, it answered so exactly that they hesitated. *Forster* afterwards was less scrupulous,

lous, but he only cut the Knot, for his character is good for nothing. Some time after the publication of his work, Sir *Joseph Banks* brought me specimens of *Leptospermum* and *Philadelphus* in fruit from *Kew*, desiring me to show him any difference: this I could not do. Being well persuaded, however, that two such dissimilar plants could not belong to one genus, the following spring I forced the dwarf variety of *Philadelphus*, and compared them when in flower: all difficulty immediately ceased; for I saw that in *Leptospermum* the Calyx and the Corolla were alternately inserted by a very short Unguis in the same line of the Receptaculum; but in *Philadelphus* the Calyx has a broad dilated base, so as completely to include the Corolla, which is inserted in a separate line nearer the Pistillum: these differences, now that we know them, may always be observed, even in the fruit; for the scars where the Calyx and Corolla were attached remain, affording another proof that the part underneath cannot possibly be a Calyx. *Melastoma* in the eighth Order perhaps alone constitutes a Natural Family; but as it is a *Tropical* genus, we can scarcely expect to see it well divided in our days: in one species from *Jamaica*, which flowered with me at *Chapel-Allerton*, there was no Calyx whatever, but in place of it, a very narrow line similar to what is left in *Eucalyptus* after its Involucrum falls off. *Lagerstræmia* in the ninth Order has a very peculiar Insertion, like nothing I now recollect but that of *Sophora tetraptera*: in both these genera the receptacle is very large and hollow, and the scars of all the various parts inserted in it remain very deep and conspicuous. The tenth Perigynous Order contains under the name of *Rosaceæ* eight sections: in the first, our common *Cherry* and *Apple Blossom*, though generally passed over by Botanists, afford incontrovertible proofs of the presence of a receptacle distinct from the Calyx, as well as *Fragaria*, *Potentilla*,
Comarum,

Comarum, *Geum*, and *Rubus*: *Rosa* of all others stands conspicuous in this respect, its receptacle, vulgarly called *Hip* with us, being very similar to that of *Ficus*. In the eleventh Order of *Leguminosæ*, this part is again of primary importance, and in no genus more so, than the vast *Mimosa*, which will, I suspect, be most naturally subdivided by attending to its receptacle: I know three species at least, in each of which its structure is very different. In *Cassia* the Receptacle is remarkable and persistent, whereas the real Calyx is deciduous. In *Trifolium* it varies most beautifully, and the numerous *Papilionaceæ*, from *Port Jackson*, will possibly be better discriminated by it.

In the two last Orders of *Perigynous Corollas*, *Terebintaceæ* and *Rhamni*, I scarcely yet know a genus except *Cneorum*: this has most clearly both Petala and Stamina hypogyna quite separate from the Calyx. *Ilex* has its Petals equally distinct from the Calyx, and cohering slightly at the base with each other. *Phytica* I think belongs to a very different order: its whole fructification is singular, and I know no genus that approaches it but *Penæa*: in both I suspect the real Calyx is inferus and 2-phyllous.

I have thus, Gentlemen, endeavoured to point out, what I conceive to be a false notion which has misled the very first Botanist now living, respecting the insertion of the Stamina in so great a number of Natural Families. I fear that I have tired you, "*ornari enim res ipsa negat*:" but I see many around me whose abilities to decide upon far more abstruse and difficult points in Botany are unquestionable, and, if my remarks have allured only one of you to investigate the subject, or to study the Affinities of Plants, I shall feel very proud.